

V. ON APAREIODON, A NEW GENUS OF CHARACID FISHES.*

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(PLATES XI-XII.)

*Apareiodon*¹ is in all respects like *Parodon* except that there are no teeth in the side of the lower jaw. The ampulla on the upturned edge of the lower jaw, with which the teeth are associated in *Parodon*, is less well-developed in this genus.

Distribution.—Western Panama and Ecuador, Rio San Francisco, La Plata.

Type: *Parodon piracicabæ* Eigenmann.

KEY TO THE SPECIES OF APAREIODON.

- a. Mouth distinctly inferior.
 - b. A dark streak along the lateral line and a second one above the first or second row of scales above it.
 - c. Head 5; lateral line 41 or 42; interorbital 3, or less than 3, in the length of the head. 1. *piracicabæ* (Eigenmann).
 - cc. Head 4.5; lateral line 35 or 36; interorbital 3 in the length of the head. 2. *itapicuruensis* Eigenmann & Henn.
 - bb. A dark streak along the lateral line and dark shades across the back, at least in the adult.
 - d. Lateral band continuous.
 - e. Two teeth in the maxillary; lateral line 40-44; predorsal scales 12-14; eye 4 in the head, interorbital less than 3.
 - 3. *affinis* (Steindachner).
 - ee. One tooth in the maxillary; lateral line usually 37 (41 in one specimen); predorsal scales 10-12, usually 11.
 - 4. *hasemanni* Eigenmann.
 - dd. Three broken stripes; dorsal and caudal lobes with cross-bands.
 - 5. *dariensis* Meek & Hildebrand.
 - ddd. Lateral band moniliform; one maxillary tooth; lateral line 37; predorsal scales 11-12. 6. *ecuadoriensis* (Eigenmann & Henn).
 - aa. Mouth terminal; a simple lateral band. 7. *terminalis* (Eigenmann & Henn).

1. *Apareiodon piracicabæ* (Eigenmann).

Parodon affinis EIGENMANN & NORRIS (*non* STEINDACHNER), Revista Museu Paulista, Vol. IV, 1900, p. 356.

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¹ α privative, *παρεία* = the cheek, *ὀδών*, = tooth; *Apareiodon* = without teeth in the cheeks, or side of the mouth.

Parodon piracicaba EIGENMANN, Proc. U. S. Nat. Mus., Vol. XXXIII, 1907, p. 6, (Piracicaba, Province São Paulo, Brazil); Reports Princeton Univ. Exp. Patagonia, Vol. III, 1910, p. 423.

Habitat.—Basin of the Tieté.

9292 *a-c*, I. U. M. 112–127 mm. Piracicaba, von Ihering. **Types**.

6588 *a*, C. M. 150 mm. Piracicaba, July 23, 1908. Haseman.

5705 *a-e*, C. M. 61–125 mm. Salto Avanhandava, above the falls. Sept. 14, 1908. Haseman.

12660 *a*, I. U. M. 93 mm. Puerto Bertoni, Alto Paraná. Bertoni.

Head 5 (4.5 in the smallest); depth 4.33–4.75; D. 10–12; A. 8.1; P. 14; scales 4–40 to 43–3; eye 3.6–4 in the head, snout about 3, equal to interorbital; depth of caudal peduncle equals one-half the depth at the dorsal.

Dorsal and ventral profiles about equally arched. Four premaxillary and two maxillary teeth; origin of dorsal about equidistant from snout and middle of adipose or some point behind the adipose in the young, highest dorsal ray about equal to head less half the opercle, its margin obliquely truncate, the longest ray scarcely projecting beyond tip of last ray; end of anal about on vertical from origin of adipose in adult; height of anal a little greater or a little less than length of head.

A dark stripe from tip of snout along lateral line to end of middle caudal rays, obscure on head, well marked on sides; a second band, narrower and less intense between first and second scale below dorsal from occiput to adipose dorsal; a silvery band below the lateral band; one to three dusky spots along the middle of the back in front of the dorsal, usually obscure or absent in the adult; dark shades across the back just in front of the adipose, between dorsal and adipose, at the dorsal, and at the nape, a partial band confined to the sides between the bands at the dorsal and at the nape. These cross-shades are well marked in some of the young, very obscure or absent in the adult.

2. *Apareiodon itapicuruis* Eigenmann & Henn. (Plate XI, fig. 2.)

5804 *a*, C. M. **Type**. 78 mm. Rio Paiaia, tributary of Rio Itapicurú. Nov. 8, 1907. Haseman.

5805 *a-c*, C. M. **Paratypes**, 62–72 mm. Same place and date.

5806 *a-e*, C. M.; 13542 *a-c*, I. U. M. **Paratypes**, 46–66 mm. Queimadas, Rio Itapicurú, March 2, 1908. Haseman.

5807 *a-m*, C. M. (Young) 24-43 mm. Same lot as 5806, C. M. Haseman.

5808 *a*, C. M. 26 mm. Timbo, Rio Itapicurú, March 5, 1908. Haseman.

5809 *a*, C. M. 48 mm. Rio Aqua Branca, Nov. 6, 1907. Haseman.

Closely related to *A. piracicabæ* (Eigenmann), differing in the slightly larger scales, longer head, and in coloration.

Head 4-4.5; depth 4-4.5; D. 11, rarely 12; A. 8, the first ray, a mere rudiment; scales 4-35 or 36-3. Eye 1.25 in snout, 3.5 in head; snout equal to interorbital, which is 3 in the head. Occipital process bluntly rounded, bordered by two or three scales; no fontanels. A regular median predorsal series of ten or eleven scales.

Dorsal profile gently curved, ventral profile flattened, horizontal or curved. Depth of caudal peduncle about half the depth at dorsal. Snout conical; mouth inferior; four slender multicuspid premaxillary teeth, two minute maxillary teeth, no mandibular teeth.

Origin of the dorsal equidistant from the tip of the snout and a point four or five scales behind the adipose, its height equal to the head less half the opercle. End of anal on, or slightly in advance of, the vertical from the adipose, its height equal to the snout and eye. Ventrals overlap the anus, their origin equidistant from the tip of the snout and the tips of the middle rays of the caudal. Caudal forked, the lobes rounded, their length somewhat less than the head.

Upper border of snout margined with brownish; a broad band of the same color extends from the upper angle of the opercles along the lateral line to the tips of the middle rays of the caudal. A narrower band extends above and parallel to this through the center of the third row of scales from above the eye to the base of the caudal. The space between these two bands and the ventral surface is whitish or silvery. Extending from the upper band across the dorsal ridge to the corresponding band of the other side is a series of broad vertical bands forming blotches; the first, midway between occiput and dorsal, another through the center of dorsal, and the last over the adipose. These often show through the clear space between the two lateral bands; others, midway between these, extend only over the dorsal ridge. All fins hyaline or colorless, except for faint markings at the base of both lobes of the caudal.

Young specimens (5807) have all the markings less distinct; the upper lateral stripe is especially late in making its appearance.

3. *Apareiodon affinis* (Steindachner). (Plate XI, fig. 1.)

Parodon affinis STEINDACHNER, Neue & Seltene Fisch-Arten, 1879, p. 20, pl. III, fig. 3 (La Plata); EIGENMANN & EIGENMANN, Proc. U. S. Nat. Mus., Vol. XIV, 1891, p. 49; BERG, An. Mus. Nac. Buenos Aires, Vol. V, 1897, p. 279 (Rio de La Plata; Paraguay); BOULENGER, Trans. Zoöl. Soc. London, Vol. XIV, 1896, p. 34 (North Paraguay); Bull. Mus. Torino, Vol. XII, 1897 (Caiza; Mission de San Francisco). EIGENMANN, Reports Princeton Univ. Exp. Patagonia, Vol. III, 1910, p. 423; EIGENMANN & KENNEDY, Proc. Acad. Nat. Sci. Phila., 1903, p. 512.

Parodon paraguayensis EIGENMANN, Proc. U. S. Nat. Mus., Vol. XXXIII, 1907, p. 6 (Asunción); Ann. Carnegie Mus., Vol. IV, 1907, p. 124, pl. XXXIX, fig. 1, 1907 (Asunción); Reports Princeton Univ. Exp. Patagonia, Vol. III, 1910, p. 423.

Habitat.—La Plata Basin.

6589 *a-d*, C. M. 128–138 mm. São João del Rei, Rio das Mortes, emptying into Rio Grande, this into Paraná. May 17, 1908. Haseman.

?5706 *a-c*, C. M. 21–31 mm. Rio Paranyha bridge, Aug. 15, 1908. Haseman.

6591 *a-f*, C. M. 92–101 mm. Cacequy, Rio Ibicuhy, emptying into Rio Uruguay. Feb. 1 and 2, 1909. Haseman.

6590 *a-i*, C. M. 28–120 mm. Uruguayana, February 5, 1909. Hasemann.

6592 *a-b*, C. M. 91–106 mm. Asunción, March 29, 1909. Haseman.
10237 *a-n*, I. U. M. 45–80 mm. Asunción. Anisits.

6594 *a*, C. M. Corumbá. April 27, 1909. Haseman.

6593 *a-k*, C. M. 87–112 mm. Villa Hayes. April 13, 1909. Haseman.

9953 *a-o*, I. U. M. 52–80 mm. Asunción, Paraguay. Anisits.

9952 *a-j*, I. U. M. 76–96 mm. Asunción, Paraguay. Anisits.

9975 *a-c*, I. U. M. Between 40 and 50 mm. Asunción, Paraguay. Anisits.

Head 3.5–4.5; depth 4.33–5.5; D. 11 or 12; A. 7 or 8; P. 12–14; scales 4 $\frac{40}{2}$, $\frac{41}{2}$, $\frac{42}{3}$, $\frac{43}{2}$, $\frac{44}{12}$; 12 to 14 predorsal scales; eye 3.5–4 in the head, snout 3, about equal to interorbital; width of mandible 5–5.5 in the head.

Origin of dorsal equidistant from tip of snout and tip of adipose or a little farther back; height of dorsal equal to the portion of the head in front of upper angle of gill-opening; margin of dorsal obliquely truncate, the highest ray extending beyond tip of last; adipose fin over the anal.

A dark band from tip of snout along lateral line to tip of middle caudal rays, a silvery band below it; back with faint dark cross-shades, narrower and usually more numerous than in *piracicabæ*, one below tip of adipose, one in front of the adipose, two or three between adipose and dorsal, one or two below dorsal, one just in front of dorsal, one or two between dorsal and nape, and one at nape. Sometimes only one between dorsal and the one just in front of adipose, and but one between that under the dorsal and that at the nape. Some of the smaller specimens with only three cross-shades; at the adipose, under the dorsal, and at the nape. Sometimes the cross-shades in front of the dorsal are broken.

Parodon affinis was described by Steindachner as having two teeth on the side of each mandible. I have examined the types in the Vienna Museum, and was not able to detect any teeth. I had, however, described a new species, *Parodon paraguayensis*, largely because it differed from *affinis* in having no teeth on the sides of the lower jaw. The two species seem therefore to be synonymous. None of the many specimens examined have teeth in the mandibles. The figure (Pl. XI, fig. 1) is from the type of *P. paraguayensis*.

4. *Apareiodon hasemani*, sp. nov. (Plate XII.)

6587 *a*, C. M. **Type**, 75 mm. Pirapora, Dec. 15, 1907. Haseman,
6585 *a-l*, C. M. **Paratypes**, 61-75 mm.; same place and date. Haseman.

6584 *a-f*, C. M. **Paratypes**, 35-63 mm. Cidade do Barra, Dec. 6, 1907. Haseman.

6583 *a-f*, C. M. **Paratypes**, 44-68 mm. Januarã, Dec. 12, 1907. Haseman.

6586 *a*, C. M. **Paratype**, 53 mm. Lagoa Pereira, Dec. 23, 1907. Haseman.

6582 *a-j*, C. M. **Paratypes**, 72-85 mm. Penedo, March 20, 1908. Haseman.

Head 4.5-5; depth 4.5; dorsal 11 or 12. Anal 7 or 8; interorbital equal to snout, 3 in head in the smaller specimens; 2.66 in 6582 *a*, in which the interorbital is a trifle greater than the snout. Lateral line $\frac{36}{4^2}$, $\frac{37}{9}$, $\frac{38}{9}$, $\frac{40}{3}$, $\frac{41}{1}$. Predorsal scales $\frac{10}{2^2}$, $\frac{11}{21}$, $\frac{12}{3}$; depth of caudal peduncle half, or more than half the greatest depth.

In general shape like the other species of the genus; dorsal and ventral profiles equally curved from the snout; mouth inferior, below the middle

² Number of individuals having the given character.

point between snout and eye; four premaxillary teeth, *only one maxillary tooth*; no mandibular teeth.

Base of the dorsal a little nearer the snout than to the end of the lateral line; second, third, and fourth rays projecting slightly, equal to head less half the opercle; origin of ventrals about equidistant from snout, and middle of dorsal; ventrals reaching anus, or a little shorter.

Straw-colored, probably translucent in life; sides of head metallic silvery; a silvery lateral band with a sharp ventral margin; chromatophores on the upper half of the scales of the lateral line in front, on the entire scale of the lateral line on the caudal peduncle, continued as a dark streak on the middle rays of the caudal; upper part of snout in front of nares dark, upper half of opercle with numerous chromatophores; very faint dark shades across the back. The color is *potentially* like that of *affinis* of the same size. The chromatophores are similarly distributed, but less intensely pigmented.

6582 *a-j*, 59-85 mm. Penedo, March 20, 1908. Haseman.

The specimens from Penedo are larger than any of the others; the dark shades across the back are more evident, the stripe along the lateral line less evident. The scales are more numerous, the lateral line being $\frac{39}{2}, \frac{40}{7}, \frac{41}{1}$. The latter character evidently varies with the locality; in the Pirapora specimens it is $\frac{37}{1}, \frac{38}{6}$, in the Januaria specimens $\frac{36}{1}, \frac{37}{1}, \frac{38}{1}$, in those from Cidade do Barra $\frac{36}{3}, \frac{37}{6}, \frac{38}{2}$.

5. *Apareiodon dariensis* (Meek & Hildebrand).

Parodon dariensis Meek & Hildebrand, Field Museum Publications, No. 166, Zoöl. Ser., Vol. X, 1913, p. 83.

Habitat.—Western slopes of Southern Panama.

6. *Apareiodon ecuadoriensis* (Eigenmann & Henn).

Parodon ecuadoriensis EIGENMANN & HENN, Indiana University Studies, No. 19, 1914, p. 12 (Vinces River, and forest pools).

Habitat.—Western slopes of Ecuador.

7. *Apareiodon terminalis* (Eigenmann & Henn).

Parodon terminalis EIGENMANN & HENN, Indiana University Studies, No. 19, 1914, p. 12 (Vinces River, and forest pools).

Habitat.—Western slopes of Ecuador.